

IN THE CLAIMS:

Please make the following amendments to the claims as noted.

1. (original) Method for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, in particular a meat mass, comprising the steps of

a) filling a mould cavity, which is open on one side, with the mass of foodstuff starting materials which are suitable for consumption, which mould cavity is defined by a boundary comprising walls and base, in order to mould a moulded three-dimensional product; and

b) removing the moulded three-dimensional product from the mould cavity; wherein step b) comprises the removal of the adhesion forces between product and boundary of the cavity substantially simultaneously at all the interfaces between the moulded three-dimensional product and the boundary.

2. (cancelled)

3. (cancelled)

4. (cancelled)

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (original) Device for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, in particular a meat mass, comprising a moulding surface, which is provided on one side with one or more mould cavities which are open on one side and are defined by a boundary comprising walls and base, a mass feed member, which is arranged at a mass feed position, for feeding the said mass to the mould cavities, wherein the device comprises means for applying a medium for eliminating adhesion forces between the boundary (66, 68) of a mould cavity (60) and a moulded product (78).

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (cancelled)

15. (cancelled)

16. (cancelled)

17. (cancelled)

18. (cancelled)

19. (original) Moulding device for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, comprising

- a drum which can be rotated in a direction of rotation by associated drive means and has a drum wall which is provided with at least one mould cavity which is open on the outer circumference of the drum and is delimited by a boundary comprising walls and base,

- a mass feed member for supplying the said mass to the mould cavity, which is arranged at a mass feed position along the outer circumference of the drum, and

- reduced-pressure means for forming a reduced pressure in the mould cavity, wherein around the outer circumference of the drum (16) there is a strip (86), the strip being provided, at the location of a mould cavity (60), with a flexible premoulds (90) which substantially corresponds to the mould cavity.

20. (cancelled)

21. (cancelled)

22. (cancelled)

23. (cancelled)

24. (cancelled)

25. (cancelled)

26. (cancelled)

27. (cancelled)

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29. (cancelled)

30. (cancelled)

31. (cancelled)

32. (cancelled)

33. (cancelled)

34. (original) Moulding device for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, comprising

- a drum which can be rotated in a direction of rotation by associated drive means and has a drum wall which is provided with mould cavities which are open at the outer circumference of the drum and are defined by a boundary comprising walls and a base;
  - a mass feed member for feeding the said mass to the mould cavities, which is arranged at a mass feed position along the outer circumference of the drum; and
  - reduced-pressure means for forming a reduced pressure in the mould cavities,
- wherein the boundary (66, 68) is at least in part provided with a large number of fine openings which are in communication with the reduced-pressure means.

35. (cancelled)

36. (cancelled)

37. (cancelled)

38. (cancelled)

39. (cancelled)

40. (cancelled)

41. (cancelled)

42. (cancelled)

43. (cancelled)

44. (cancelled)

45. (cancelled)

46. (cancelled)

47. (cancelled)

48. (cancelled)

49. (original) Release device (21) for removing moulded products (78) from one or more mould cavities (60) of a moulding device, comprising drivable endless conveyors (120) which are arranged in parallel and describe a movement about turning elements (122), between which conveyors (120) there are connecting elements (136), in such a manner that the connecting elements (136), at the release position, pass substantially through the centre of

the axis of the turning element (122) in question.

50. (cancelled)

51. (original) Mass feed member (18) for feeding a mass of foodstuff starting materials which are suitable for consumption, in particular a meat mass, to a mould cavity in the outer circumference of the drum of a moulding device, comprising a housing (140) with an inlet side and a drum side which is to face the drum, a through-passage (142) for mass to pass from an inlet (144) towards an outlet (146) located on the drum side, the drum side being designed to adjust in a sealing manner to irregularities in the outer circumference of the drum (16).

52. (cancelled )

53. (cancelled)

54. (cancelled)

55. (cancelled)

56. (original) Moulding surface, in particular a moulding drum, for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, in particular from a meat mass, provided on one side with one or more mould

cavities which are open on one side and are defined by a boundary comprising walls and a base, wherein the walls (66) and base (68) which form the boundary are provided with holes which extend through the boundary.

57. (cancelled)

58. (cancelled)

59. (cancelled)

60. (cancelled)

61. (cancelled)

62. (cancelled)

63. (new) Moulding surface for moulding three dimensional products from a mass of foodstuff starting materials which are suitable for consumption, in particular from a meat mass, provided on one side with one or more mould cavities which are open on one side and are defined by a boundary comprising walls and a base, which boundary comprises a porous structure having intercommunicating pores, wherein the openings of the pores which open out at a surface of the moulding surface are closed, and the openings of the pores of the boundary are open.



64. (new) Moulding surface according to claim 63, wherein the porous structure is made from sintered metal.

65. (new) Moulding surface according to claim 63, wherein the moulding surface is made from a single piece.

66. (new) Moulding surface according to claim 63, wherein the moulding surface is a rotatable moulding drum.

67. (new) Moulding surface according to claim 63, wherein the shape of the mould cavities is identical.

68. (new) Assembly of at least two moulding surfaces for moulding three-dimensional products, in particular moulding drums, according to claim 63, in which the shape of the mould cavities of one moulding surface is identical and differs from the shape of the mould cavities in another moulding surface.

69. (new) Method of manufacturing a moulding surface, in particular a moulding drum, for moulding three dimensional products from a mass of foodstuff starting materials, which are suitable for consumption, in particular from a meat mass, comprising the steps of providing a single piece having a porous structure of electroconductive material, preferably made from sintered metal having intercommunicating pores, shaping the single piece of

sintered metal into a moulding surface thereby closing the pore openings which open out at at least one surface of the single piece, and providing mould cavities in said at least one surface, which mould cavities are open at said at least one surface and are defined by a boundary comprising walls and a base, by spark erosion, thereby exposing the pore openings in said boundary.

70. (new) Method for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, in particular a meat mass, comprising the steps of

a) filling a mould cavity of a moulding surface, which is open on one side, with the mass of foodstuff starting materials which are suitable for consumption, which mould cavity is defined by a boundary comprising walls and base, in order to mould a moulded three-dimensional product, and which boundary comprises a porous structure having intercommunicating pores, wherein the openings of the pores which open out at a surface of the moulding surface are closed, and the openings of the pores of the boundary are open; and

b) removing the moulded three-dimensional product from the mould cavity by removing the adhesion forces between product and boundary of the cavity substantially simultaneously at all the interfaces between the moulded three-dimensional product and the boundary.

71. (new) Method according to claim 70, wherein the porous structure is made from sintered metal.

72. (new) Method according to claim 70, wherein a means for eliminating adhesion forces is used for the removal of the adhesion forces.

73. (new) Method according to claim 72, wherein the medium for eliminating adhesion forces is selected from a visco-elastic material and a forcing fluid.

74. (new) Method according to claim 70, wherein a pressurized fluid is fed to the boundary pores during step b).

75. (new) Method according to claim 70, wherein during step a) air which is enclosed between the mass and the boundary is discharged via the boundary.

76. (new) Method for moulding three-dimensional products from a meat mass, comprising the steps of

a) filling a mould cavity, which is open on one side, with the meat mass, which mould cavity is defined by a boundary comprising walls and base, in order to mould a moulded three-dimensional product;

b) closing the open side of the mould cavity;

c) holding the mass in the closed mould cavity; and

removing the moulded three-dimensional product from the mould cavity by removing the adhesion forces between product and boundary of the cavity substantially simultaneously at all the interfaces between the moulded product and the boundary.

77. (new) Method according to claim 76, wherein a means for eliminating adhesion forces is used for the removal of the adhesion forces.

78. (new) Method according to claim 77, wherein the means for eliminating adhesion forces is selected from the group consisting of an optionally permanent coating of the mould cavity, a visco-elastic material and a forcing fluid.

79. (new) Method according to claim 76, wherein the boundary is provided with passages with openings, a pressurized fluid being fed to the passages.

80. (new) Method according to claim 79, wherein the boundary comprises a porous structure of intercommunicating pores.

81. (new) Method according to claim 80, wherein the porous structure is made from sintered metal.

82. (new) Method according to claim 76, wherein during step a) air which is enclosed between the mass and the boundary is discharged via the boundary.

83. (new) Device for moulding three-dimensional products from a mass of foodstuff starting materials, which are suitable for consumption, in particular from a meat mass, comprising

a moulding surface, which is provided on one side with one or more mould cavities which are open on one side and are defined by a boundary comprising walls and base, which boundary comprises a porous structure having intercommunicating pores, wherein the openings of the pores which open out at a surface of the moulding surface are closed, and the openings of the pores of the boundary are open;

a mass feed member, which is arranged at a mass feed position, for feeding the said mass to the mould cavities, comprising means for closing a mould cavity and maintaining the mould cavity in a closed condition, the device also comprising means for applying a medium for eliminating adhesion forces between the boundary of a mould cavity and a moulded product.

84. (new) Device according to claim 83, wherein the porous structure is made from sintered metal.

85. (new) Device according to claim 83, wherein the said means comprise excess-pressure means for supplying a pressurized fluid which are in fluid communication with the boundary of a mould cavity.

86. (new) Device according to claim 83, wherein the device also comprises reduced-pressure means for forming a reduced pressure in a mould cavity.

87. (new) Device according to claim 83, wherein the boundary of a mould cavity can be selectively coupled to the reduced-pressure means and the excess-pressure means.

88. (new) Device for moulding three-dimensional products from a meat mass, comprising

a moulding surface, which is provided on one side with one or more mould cavities which are open on one side and are defined by a boundary comprising walls and base,

a mass feed member, which is arranged at a mass feed position, for feeding the said mass to the mould cavities, comprising means for closing a mould cavity and maintaining the mould cavity in a closed condition, the device also comprising means for applying a medium for eliminating adhesion forces between the boundary of a mould cavity and a moulded product.

89. (new) Device according to claim 88, wherein the said means for applying a medium comprise excess-pressure means for supplying a pressurized fluid which are in fluid communication with the boundary of a mould cavity.

90. (new) Device according to claim 88, wherein the boundary is provided with passages with openings, which passages are in communication with the excess-pressure means.

91. (new) Device according to claim 90, wherein the boundary comprises a porous structure of intercommunicating pores.

92. (new) Device according to claim 91, wherein the porous structure is made

from sintered metal.

93. (new) Device according to claim 88, wherein the said means comprise an optionally permanent coating of the boundary of a mould cavity.

94. (new) Device according to claim 88, wherein the device also comprises reduced-pressure means for forming a reduced pressure in a mould cavity.

95. (new) Device according to claim 94, wherein a connecting passage is in communication with the boundary of a mould cavity, which connecting passage can be selectively coupled to the reduced-pressure means and the excess-pressure means.

96. (new) Device according to claim 88, wherein the moulding surface is made from a sintered metal in which the mould cavities have been formed by spark erosion.

97. (new) Device according to claim 88, wherein the moulding surface is provided with recesses in which corresponding inserts are removably accommodated, which inserts comprise the mould cavities.

98. (new) Device according to claim 88, wherein the moulding surface is the wall of a drum which can be rotated in a direction of rotation by associated drive means and is provided with at least one mould cavity which is open on the outer circumference of the drum and has an associated boundary comprising walls and base.

99. (new) Moulding device for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, comprising

- a drum which can be rotated in a direction of rotation by associated drive means and has a drum wall which is provided with at least one mould cavity which is open on the outer circumference of the drum and is delimited by a boundary comprising walls and base,
- a mass feed member for supplying the said mass to the mould cavity, which is arranged at a mass feed position along the outer circumference of the drum, and
- reduced-pressure means for forming a reduced pressure in the mould cavity, wherein around the outer circumference of the drum there is a strip, the strip being provided, at the location of a mould cavity, with a flexible premould which substantially corresponds to the mould cavity;

wherein preferably the flexibility of the premoulds is greater than the flexibility of the surrounding part of the strip;

wherein preferably the strip has a sandwich structure, which structure comprises a layer comprising flexible premoulds made from a first plastics material, and a layer with openings in it, the periphery of which openings substantially corresponds to that of the flexible premoulds, made from a second plastics material with a higher rigidity than the first plastics material;

wherein preferably the plastics material of the layer comprising flexible premoulds is a thermoplastic elastomer;

wherein preferably the premoulds are produced by thermoforming;

wherein preferably at the outer periphery the strip is protected by a protective strip of



wear-resistant material, in which there are openings, the periphery of which substantially corresponds to the periphery of the premoulds in the strip;  
wherein preferably the wear-resistant material is a metal or metal alloy;  
wherein preferably the device also comprises excess-pressure means which are in communication with the mould cavity and are designed to feed a pressure medium to the mould cavity.

100. (new) Strip clearly intended for use in a moulding device having at least one mould cavity according claim 99, which strip is provided, at the location of a mould cavity, with a flexible premould which substantially matches the mould cavity;

wherein preferably the flexibility of a premould is greater than the flexibility of the surrounding part of the strip;

wherein preferably the strip has a sandwich structure, which structure comprises a layer with flexible premoulds made from a first plastics material, and a layer in which there are openings, the periphery of which substantially corresponds to that of the flexible premoulds, made from a second plastics material with a higher rigidity than the first plastics material;

wherein preferably the plastics material of the layer comprising flexible premoulds is a thermoplastic elastomer;

wherein preferably the premoulds are produced by thermoforming.

101. (new) Assembly of a strip according to claim 100 and a protection strip made from wear-resistant material in which there are openings, the periphery of which substantially

corresponds to the periphery of the premoulds in the strip;

wherein preferably the wear-resistant material is a metal or metal alloy.

102. (new) Moulding device for moulding three-dimensional products from a mass of foodstuff starting materials which are suitable for consumption, comprising

- a drum which can be rotated in a direction of rotation by associated drive means and has a drum wall which is provided with mould cavities which are open at the outer circumference of the drum and are defined by a boundary comprising walls and a base;
- a mass feed member for feeding the said mass to the mould cavities, which is arranged at a mass feed position along the outer circumference of the drum; and
- reduced-pressure means for forming a reduced pressure in the mould cavities, wherein the boundary is at least in part provided with a large number of fine openings which are in communication with the reduced-pressure means;

wherein preferably the boundary comprises a porous structure of intercommunicating pores;

wherein preferably the porous structure of the boundary is made from sintered metal;

wherein preferably the outer circumference of the drum is provided with recesses in which corresponding inserts are removably accommodated, which inserts comprise the mould cavities;

wherein preferably the device also comprises excess-pressure means which are in communication with the openings in the boundary of a mould cavity and are designed to supply a pressure medium to the mould cavity;

wherein preferably there is an opening in the base of the recess;

wherein preferably a connecting passage is in communication with the opening in the base of the recess, which connecting passage can be selectively connected to the reduced-pressure means and the excess-pressure means.

103. (new) Moulding device according to claim 83, wherein the device is provided with a release device, which is arranged at a release position, for removing the moulded products from the mould cavities.

104. (new) Moulding device according to claim 103, wherein the release device comprises drivable endless conveyors which are arranged in parallel and describe a movement path around turning elements, and between which conveyors there are connecting elements, in such a manner that the connecting elements, at the release position, pass substantially through the centre of the axis of the turning element in question.

105. (new) Moulding device according to claim 104, wherein the endless conveyors comprise chains, the links of which comprise an inwardly projecting part to which transverse spindles are connected.

106. (new) Moulding device according to claim 83, wherein the mass feed member comprises a housing in which there is a through-passage for mass to pass from an inlet to an outlet located on the drum side, the drum side bearing in a sealing manner against the drum and being designed to adapt to irregularities in the outer circumference of the drum.

107. (new) Moulding device according to claim 106, wherein the drum side of the mass feed member comprises a flexible plate which bears against the outer circumference of the drum under pressure as a result of pressure means.

108. (new) Moulding device according to claim 107, wherein the pressure means comprise one or more pressure cushions, a number of lamellae, which are positioned transversely to the direction of rotation of the drum, being arranged between a pressure cushion and the plate.

109. (new) Moulding device according to claim 106, wherein the drum side of the mass feed member, as seen in the circumferential direction of the drum, extends on either side of the outlet, over a distance which covers at least one mould cavity.

110. (new) Moulding device according to claim 106, wherein there is a cutting device in the through-passage on the drum side of the mass feed member.

111. (new) Release device for removing moulded products from one or more mould cavities of a moulding device, comprising drivable endless conveyors which are arranged in parallel and describe a movement about turning elements, between which conveyors there are connecting elements, in such a manner that the connecting elements, at the release position, pass substantially through the centre of the axis of the turning element in question;

wherein preferably the endless conveyors comprise chains, the links of which

comprise an inwardly projecting part to which transverse spindles are connected.

112. (new) Mass feed member for feeding a mass of foodstuff starting materials which are suitable for consumption, in particular a meat mass, to a mould cavity in the outer circumference of the drum of a moulding device, comprising a housing with an inlet side and a drum side which is to face the drum, a through-passage for mass to pass from an inlet towards an outlet located on the drum side, the drum side being designed to adjust in a sealing manner to irregularities in the outer circumference of the drum;

wherein preferably the drum side of the mass feed member comprises a flexible plate which bears against the outer circumference of the drum under pressure as a result of pressure means;

wherein preferably the pressure means comprise one or more pressure cushions, a number of lamellae, which are positioned transversely with respect to the direction of rotation of the drum, being arranged between a pressure cushion and the plate;

wherein preferably the drum side of the mass feed member, as seen in the circumferential direction of the drum, extends on either side of the outlet, over a distance which covers at least one mould cavity;

wherein preferably a cutting device is provided in the through-passage on the drum side.

113. (new) Moulding device according to claim 88, wherein the device is provided with a release device, which is arranged at a release position, for removing the moulded products from the mould cavities.

114. (new) Moulding device according to claim 99, wherein the device is provided with a release device, which is arranged at a release position, for removing the moulded products from the mould cavities.

115. (new) Moulding device according to claim 102, wherein the device is provided with a release device, which is arranged at a release position, for removing the moulded products from the mould cavities.

116. (new) Moulding device according to claim 88, wherein the mass feed member comprises a housing in which there is a through-passage for mass to pass from an inlet to an outlet located on the drum side, the drum side bearing in a sealing manner against the drum and being designed to adapt to irregularities in the outer circumference of the drum.

117. (new) Moulding device according to claim 99, wherein the mass feed member comprises a housing in which there is a through-passage for mass to pass from an inlet to an outlet located on the drum side, the drum side bearing in a sealing manner against the drum and being designed to adapt to irregularities in the outer circumference of the drum.

118. (new) Moulding device according to claim 102, wherein the mass feed member comprises a housing in which there is a through-passage for mass to pass from an inlet to an outlet located on the drum side, the drum side bearing in a sealing manner against the drum and being designed to adapt to irregularities in the outer circumference of the drum.